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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,569	05/19/2005	Kazuhiro Oshika	MAT-8672US	7722
23122	7590	11/26/2007		
RATNERPRESTIA P O BOX 980 VALLEY FORGE, PA 19482-0980			EXAMINER PENDLETON, DIONNE	
			ART UNIT	PAPER NUMBER
			2627	
			MAIL DATE	DELIVERY MODE
			11/26/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/535,569

**Applicant(s)**

OSHIKA ET AL.

**Examiner**

Dionne H. Pendleton

**Art Unit**

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see After Final Amendment, filed 11/5/2007, with respect to the 35 U.S.C. 102 (e) have been fully considered and are persuasive. The last office action filed 09/05/07 has been vacated. The Amendment to claims filed 11/05/2007, has been entered.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 1-8** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, Claim 1 recites the limitation "each terminal" in line 4. There is insufficient antecedent basis for this limitation in the claim.

*(Claims 2-8 are rejected due to their claim dependency.)*

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**3. Claims 1 and 2** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chiu (US 2002/0146140)** in view of **Chomette (Patent Number 6,028,752)**.

**Regarding claim 1,**

In **figure 6**, as *best understood with regard to the U.S.C. 112 second paragraph rejection above*, CHIU teaches a loudspeaker apparatus comprising: an elongate printed circuit board (**23**) having a length greater than a width; and a plurality of speakers (**SP1-SP3**) connected to the PCB (**23**) in a substantially straight configuration; each terminal, as illustrated in figure 7, for inputting a signal of the loudspeakers being electrically coupled to a conductive pattern part of the PCB ("**23**" in figure 6; *please note, printed circuit boards are well understood in the art as defining a structure having a plurality of sheets with a conductive pattern formed thereon and disposed in a stacked arrangement*); wherein signal inputting parts for inputting a signal from an outside ("**29**" in **figure 7**) are formed by leading the conductive pattern part (inherent) to at least both ends of the printed circuit board (**23**) in the longitudinal direction (*see electrical connections provided at opposing ends of the PCB "23" in figure 6*); wherein each loudspeaker (**SP1-SP3**) covers most of a distance extending from edge to edge of said printed circuit board; and further teaches that the loudspeakers (**Figure 7**) are electrically coupled with one another.

CHIU does not teach that the plurality of loudspeakers (**SP1-SP3**) are "*mounted on*" the printed circuit boards along its length.

CHOMETTE, in **Figures 6-8**, teaches a plurality of embodiments wherein a loudspeaker is alternatively connected to a printed circuit board. In **Figure 1**, Chomette teaches that a loudspeaker (**11**) may be mounted above a printed circuit board (**2**), similar to the connection arrangement employed by the Chiu reference.

Alternatively, in **Figure 7 and 8**, Chomette teaches that a loudspeaker (**32**) may be "mounted on" the printed circuit board (**31**), said orientation being apparent from the presentation of the device as illustrated in figure 8.

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Chiu and Chomette, choosing instead a surface mount connection between the loudspeakers and PCB of Chiu, such that the PCB extends only the length of the loudspeakers (SP1, SP2 and SP3), thereby minimizing the need for additional space in the housing for separately accommodating a laterally placed PC. Additionally said surface mount technique reduces reliance upon wire connections and ensures a good electrical connection between circuit components.

*Examiner note:*

*A separate PCB may likewise be employed for surface mounting speakers SP4-SP6 thereto. One of ordinary skill in the art would easily provide an electrical connection between adjacent PCBs, without undue experimentation.*

**Regarding claim 2,**

**Figures 6 and 7** of Chiu teach that the signal inputting part ("**29**" in **figure 7**) comprises a terminal of the PCB (***shown but not labeled in figure 6***) coupled with a connector (**9**) which is coupled with a second set of loudspeakers (**SP4-SP6**).

While , Chomette teaches the obviousness of providing a first and second PCB for surface mounting the first (SP1-SP3) and second (SP4-SP6) set of loudspeakers in Chiu, respectively thereto.

**4. Claims 3-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chiu (US 2002/0146140)** in view of **Chomette (Patent Number 6,028,752)**, as applied to claim 1 above, and further in view of ***Applicant's Admitted Prior Art***.

**Regarding claims 3 and 6,**

The combined disclosures of Chiu and Chomette teach the invention of claims 1 and 2. The combined disclosures fail to clearly teach that the impedance is equalized or approximated to an impedance of one loudspeaker.

However, the Examiner notes the ***Applicant's Admitted Prior Art (the unchallenged Official Notice from the last Office Action)***, that it is well known in the art and would have been obvious for one of ordinary skill in the art at the time of the invention to include a means for equalizing impedance of the drive signals applied to the speaker devices, for the purpose of more accurately reproducing the sound radiation pattern of the sensed acoustic signal.

**Regarding claims 4 and 8,**

Chiu teaches that the loudspeakers may be connected in series (**Figure 7**).

**Regarding claims 5 and 7,**

The combined disclosures of Chiu and Chomette teach the invention of claims 1 and 2. Chomette teaches further coupling the PCB to additional on-board electronics ("26" in figure 6, etc.).

Chiu and Chomette fail to teach that the electronics include a high cut filter. However, the Examiner notes the ***Applicant's Admitted Prior Art (the unchallenged Official Notice from the last Office Action)***, that further connection of a speaker array to a "high cut filter" as claimed, is well known in the art and would be obvious for the purpose of tuning the output of the audio system to a lower audio band of frequencies.

***Response to Arguments***

5. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne H. Pendleton whose telephone number is 571-272-7497. The examiner can normally be reached on 10:30-7:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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D. Pendleton

/Wayne Young/  
SPE AU 2627